

INTERNATIONAL SEARCH REPORT

PCT/US 03/32427

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 B22D41/54 B22D41/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B22D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 137 189 A (HALL RICHARD G ET AL) 11 August 1992 (1992-08-11) column 2, line 35 - line 41 column 4, line 1 - line 14 claims 1,6; figures 1-4 ---	1-17
Y	JP 54 126631 A (AIKOH CO) 2 October 1979 (1979-10-02) Not same permeability units, but novelty is questionable ---	1-17
Y	US 5 723 055 A (SIMOES JOSE ANTONIO FARIA ET AL) 3 March 1998 (1998-03-03) Not same permeability units, but novelty is questionable column 2, line 5 - line 50; figures 1-3 --- -/--	1-17

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

Date of the actual completion of the international search

15 March 2004

Date of mailing of the international search report

26/03/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Lombois, T

## INTERNATIONAL SEARCH REPORT

PCT/US 03/32427

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 634 685 A (JESCHKE PETER ET AL) 6 January 1987 (1987-01-06) column 1, line 39 - column 2, line 42 column 4, line 1 - line 16 ---	1-17
Y	EP 0 669 293 A (NORTH AMERICAN REFRACTORIES) 30 August 1995 (1995-08-30) page 1, line 23 - line 52 page 3, line 20 - line 42 page 4 - page 5; claims 1,9 ---	1-17
A	EP 0 576 212 A (FOSECO INT) 29 December 1993 (1993-12-29) column 2, line 31 - line 42 ---	1-17
A	GB 1 368 390 A (STOECKER & KUNZ GMBH) 25 September 1974 (1974-09-25) , sentence 75 - sentence 92; figure 1 ---	1-17
A	WO 00 59657 A (ANDO MITURU ;MUROI TOSHIYUKI (JP); OGURI KAZUMI (JP); TOKYO YOGYO) 12 October 2000 (2000-10-12) Permeability value in Darcy For language convinieny purpose, reference is made to US6533146 patent family member in english language; cf US family member col.5, 1.1-6 ---	1-17
A	FR 2 672 527 A (VESUVIUS FRANCE SA) 14 August 1992 (1992-08-14) abstract; figure 1 ---	1-17
Y	ASTM C 204 - 00: "STANDARD TEST METHOD FOR FINENESS OF HYDRAULIC CEMENT BY AIR-PERMEABILITY APPARATUS" ASTM INTERNATIONAL STANDARD, ASTM INTERNATIONAL, US, 2000, pages 1-8, XP001164234 "BLAINE air-permeability apparatus, permeability is expressed in terms of a specific surface unit is square centimeters per gram" ---	1-17
Y	M. INNOCENTINI ET AL.: "Influence of air compressibility on the permeability evaluation of refractory castables" J. OF AMERICAN CERAMIC SOCIETY, vol. 83, no. 6, 2000, pages 1536-1538, XP001179844 page 1537, left-hand column; figures 1,2 Paragraph "Conclusions" p.1538 ---	1-17
	---	

-/--

## INTERNATIONAL SEARCH REPORT

PCT/US 03/32427

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	M. INNOCENTINI ET AL.: "Permeability of porous ceramics considering the Klinkenberg and inertial effects" J. OF AMERICAN CERAMIC SOCIETY, vol. 84, no. 5, 2001, pages 941-944, XP002273206 page 1, left-hand column ---	1-17
Y	M. INNOCENTINI ET AL.: "Modified Pressure DECAY technique for evaluating the permeability of highly dense refractories" J. OF AMERICAN CERAMIC SOCIETY, vol. 83, no. 1, 2000, pages 220-222, XP002273207 page 220, left-hand column page 221, right-hand column page 222, right-hand column ---	1-17
Y	M. INNOCENTINI ET AL.: "Permeable porosity of refractory castables evaluated by the Water expulsion porosimetry technique" J. OF AMERICAN CERAMIC SOCIETY, vol. 84, no. 1, 2001, pages 236-238, XP002273208 page 236, left-hand column page 238, right-hand column -----	1-17

## INTERNATIONAL SEARCH REPORT

PCT/US 03/32427

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5137189	A	11-08-1992	NONE	
JP 54126631	A	02-10-1979	NONE	
US 5723055	A	03-03-1998	AT 199669 T AU 709200 B2 AU 1114897 A BR 9612628 A CA 2234451 A1 CN 1203543 A ,B CZ 9801071 A3 DE 69612110 D1 DE 69612110 T2 EP 0866739 A1 ES 2159366 T3 JP 11513617 T PL 326167 A1 SK 46098 A3 TR 9800663 T2 WO 9713599 A1	15-03-2001 26-08-1999 30-04-1997 16-07-2002 17-04-1997 30-12-1998 14-10-1998 19-04-2001 21-06-2001 30-09-1998 01-10-2001 24-11-1999 31-08-1998 11-01-1999 21-07-1998 17-04-1997
US 4634685	A	06-01-1987	DE 3439954 A1 FR 2572724 A1 GB 2166432 A ,B JP 1018828 B JP 1533036 C JP 61115663 A	07-05-1986 09-05-1986 08-05-1986 07-04-1989 24-11-1989 03-06-1986
EP 0669293	A	30-08-1995	BR 9500750 A CA 2143169 A1 EP 0669293 A1	17-10-1995 26-08-1995 30-08-1995
EP 0576212	A	29-12-1993	DE 69324408 D1 DE 69324408 T2 EP 0576212 A2 ES 2132188 T3 GB 2267855 A ,B	20-05-1999 16-12-1999 29-12-1993 16-08-1999 22-12-1993
GB 1368390	A	25-09-1974	AT 321480 B ES 409563 A1 FR 2169894 A1 IT 974028 B SE 384156 B	10-04-1975 01-12-1975 14-09-1973 20-06-1974 26-04-1976
WO 0059657	A	12-10-2000	JP 3101650 B2 JP 11114659 A WO 0059657 A1 AU 746450 B2 AU 3055899 A BR 9910943 A CA 2312482 A1 EP 1097763 A1 US 6533146 B1	23-10-2000 27-04-1999 12-10-2000 02-05-2002 23-10-2000 09-10-2001 05-10-2000 09-05-2001 18-03-2003
FR 2672527	A	14-08-1992	FR 2672527 A1	14-08-1992